

Claims

1. A secondary battery comprising a battery package which encloses the outer perimeter of the secondary battery and covers the entire outer surface of positive and negative electrodes and a portion of each terminal of the positive and negative electrodes, wherein the battery package is formed of a laminate film comprising an outer polymer layer, an inner aluminum layer and an adhesive layer formed on a portion of the inner surface of the aluminum layer, the aluminum layer of the battery package being electrically connected with either of the positive and negative terminals.

2. The secondary battery of Claim 1, wherein the aluminum layer of the battery package and the positive or negative electrode is connected directly with each other or connected with each other by an electrically conductive material.

3. The secondary battery of Claim 2, wherein the direct connection between the aluminum layer and either of the two terminals is made by any one of the following methods: a method of making the connection between the aluminum layer and the terminal by surrounding the outer surface of the battery with the battery package and more strongly pressing and thermally melting a package portion adjacent to the corresponding terminal than that of other portions; a method of making the connection by removing a portion of the adhesive layer of the battery package; if the corresponding terminal is coated with the terminal film, a method of making the connection by removing a portion of the terminal film;

and a method of making the connection by removing a portion of the adhesive layer of the battery package and a portion of the terminal film covering the terminal, which corresponds to the removed portion of the adhesive layer.

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4. The secondary battery of Claim 2, wherein the connection between the aluminum layer and either of the two terminals by the electrically conductive material is made by any one of the following methods: a method of making the
10 connection between the aluminum layer and the terminal by removing the a portion of the adhesive layer of the battery package, which is adjacent to the corresponding terminal, and then inserting a piece made of an electrically conductive material into the removed portion; and a method of making the
15 connection by removing at least a portion of the outer polymer layer of the battery package and inserting an electrically conductive material piece between the removed portion and the corresponding terminal.

20 5. The secondary battery of Claim 2, wherein the electrically conductive material is at least one selected from the group consisting of aluminum, copper and nickel.

25 6. The secondary battery of any one of Claims 1 to 5, which is a lithium secondary battery.

7. The secondary battery of any one of Claims 1 to 5, which further comprises an electrically conductive metal foil on at least one of the outer upper and lower surfaces of the
30 battery package, in which the electrically conductive metal

foil is electrically connected with either of the positive and negative terminals.

8. A battery package formed of a laminate film comprising an outer polymer layer, an inner aluminum layer and an adhesive layer formed on a portion of the inner surface of the aluminum layer, wherein a portion of the adhesive layer to be contacted with a positive or negative terminal is removed and a piece made of an electrically conductive material is inserted into the removed portion.

9. A battery package formed of a laminate film comprising an outer polymer layer, an inner aluminum layer and an adhesive layer formed on a portion of the inner surface of the aluminum layer, wherein at least a portion of the outer polymer layer of the battery package is removed and a piece made of an electrically conductive material is inserted into the removed portion.

10. A secondary battery comprising a battery package which encloses the outer perimeter of the secondary battery and covers the entire outer surface of positive and negative electrodes and a portion of each terminal of the positive and negative electrodes, wherein the battery package is formed of a laminate film comprising an outer polymer layer, an inner aluminum layer and an adhesive layer formed on a portion of the inner surface of the aluminum layer, and further comprises at least one electrically conductive metal foil on at least one of the outer upper and lower surfaces thereof, and each of the electrically conductive metal foil is

electrically connected with either of the positive and negative terminals.

11. The secondary battery of Claim 10, wherein the
5 metal foil is made of a material selected from the group consisting of electrically conductive metals, and oxides and alloys thereof.

12. The secondary battery of Claim 10, wherein the
10 metal foil additionally has thermal conductivity.

13. The secondary battery of Claim 10, wherein two more metal foils are placed on the outer surfaces of the battery package, and a separator made of an electrically non-
15 conductive material is inserted between the metal foils.

14. The secondary battery of any one of Claims 10 to 13, which is a lithium secondary battery.

20 15. A battery package formed of a laminate film comprising an outer polymer layer, an inner aluminum layer and an adhesive layer formed on a portion of the inner surface of the aluminum layer, the battery package further comprising at least one electrically conductive metal foil on
25 at least one of the outer upper and lower surfaces thereof.